

***Amendment & Response***

Page 10 of 14

*Applicant(s): Stockman et al.*

*Serial No.: 10/044,219*

*Confirmation No.: 9179*

*Filed: November 19, 2001*

*For: METHODS FOR CREATING A COMPOUND LIBRARY*

---

**Remarks**

The Office Action mailed May 19, 2003 has been received and reviewed. Claims 46, 47, and 53 having been amended, and claim 54 having been canceled, the pending claims are claims 46-53 and 55.

The amendment to the paragraph at page 14, line 5, and to claim 53, is to correct a typographical error. The amendment is supported by the specification at page 5, lines 8-10.

Reconsideration and withdrawal of the rejections are respectfully requested.

**Priority**

The Examiner has denied the priority claims. Although Applicants do submit that the three provisional applications do not specifically refer to the claimed WaterLOGSY technique, Applicants do not wish to delete the priority paragraph or the claims of priority. Applicants assume that the Examiner has fully considered any intervening art.

**Objection to the Specification**

The Examiner objected to the specification for improper incorporation by reference. In particular, the Examiner objected to incorporation of the reference Dalvit et al., "Identification of compounds with binding affinity to proteins via magnetization transfer from bulk water," *Journal of Biomolecular NMR* 18:65-68 (2000). Applicants have amended the specification.

The amendatory material incorporated into the specification of the above-identified U.S. patent application consists of the same material incorporated by reference into the specification from C. Dalvit et al., *J. Biomol. NMR.*, 18:65-68 (2000), cited at page 14, line 4 of the specification, which was incorporated by reference at page 41, lines 4-6. The only material not included is the Abstract, the first two paragraphs, and portions of the third paragraph of the paper.

The specification has also been amended at page 14, lines 10-11 to correct a typographical error. Applicants thank the Examiner for pointing out this error.

**The 37 C.F.R. 1.75(c) objection**

The Examiner objected to claims 47 and 55 under 37 C.F.R. 1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claim 46 having been amended renders these objections moot.

**The 35 U.S.C. §112, First Paragraph, Rejection**

The Examiner rejected claims 46 and 53 under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Examiner stated that this is a new matter rejection. This is respectfully traversed.

Specifically, the Examiner stated that the specification, as originally filed, does not provide support for the invention as now claimed. The Examiner pointed out that claim 53 recites "wherein the ratio of target molecule to each test molecule in each sample reservoir is about 100:1 to about 10:1." Furthermore, the specification at page 14, lines 10-11, also recites that "ratios of target molecule to compounds in each sample reservoir is about 100:1 to about 10:1." The Examiner is correct that this is an error and that the ratio should be 100:1 to about 10:1 for ligand (or test compound) to target (or target molecule). Applicants have corrected this error at claim 53 and at page 14, lines 10-11.

The Examiner also rejected claim 54 under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, the Examiner alleged that undue experimentation would be involved for one of skill in the art to determine a dissociation constant. This rejection is

respectfully traversed. As the Examiner pointed out, the level of skill for one working in this technology area is high. Also, there are numerous techniques for determining dissociation constants using NMR techniques or other techniques, which are very well known to one of skill in the art and could be carried out without undue experimentation. Accordingly, it is respectfully submitted that claim 54 meets the requirements of 35 U.S.C. §112, first paragraph; however, in the interest of expediting prosecution, claim 54 has been canceled, although Applicants reserve the right to pursue this claim in a continuing application.

**The 35 U.S.C. §112, Second Paragraph, Rejection**

The Examiner rejected claims 46-55 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner alleged that claim 46 is incomplete as the object of the method is not obtained and that it is confusing and indefinite because it refers in the method steps to a "target molecule" (in general) but the claim is drawn to a "method for identifying a protein function." The Examiner alleged that claims 47, 48, 53, 54, and 55 are indefinite for the same or similar reason. The Examiner also alleged that claim 47 is confusing in the recitation of the "concentration of the target molecule is no greater than about 10  $\mu$ M." These rejections are rendered moot in view of the amendments to claim 46, which now refers to the function of a target molecule in the preamble and to a concentration of target molecule and test compound of no greater than 100  $\mu$ M. Support for these amendments can be found throughout the specification.

The Examiner also pointed out that claim 53 is confusing in that it recites "wherein the ratio of target molecule to each test molecule in each sample reservoir is about 100:1 to about 10:1." As stated above, Applicants have corrected this error at claim 53 and at page 14, lines 10-11, to recite the ratio of "ligand (or test compound) to target (or target molecule)" is about 100:1 to about 10:1.

The Examiner alleged that claim 54 is unclear because there are no structures or method steps for determining the dissociation constant. This rejection is respectfully traversed. Applicants' Representatives do not understand why structures are needed; however, in the interest of expediting prosecution, this claim has been canceled.

**The 35 U.S.C. §103 Rejection**

The Examiner rejected claims 46-55 under 35 U.S.C. §103(a) as being unpatentable over Dalvit et al., "Identification of compounds with binding affinity to proteins via magnetization transfer from bulk water," *Journal of Biomolecular NMR* 18:65-68 (2000) in view of Keifer et al., "Direct-Injection NMR (DI-NMR): A Flow NMR Technique for the Analysis of Combinatorial Chemistry Libraries," *J. Comb. Chem.* 2:151-171 (2000). This rejection is respectfully traversed.

There is no teaching or suggestion in either document of the use of the WaterLOGSY NMR method to identify the function of a target molecule, such as a protein, using a mixture of test compounds consisting of known inhibitors, cofactors, and substrates of known proteins. Although the claimed method uses the techniques disclosed in Dalvit et al., Dalvit et al. is directed to screening compounds for binding to a target. There is no specific teaching or suggestion of a method of determining the function of such targets. Neither is this taught or suggested in Keifer et al.

**Amendment & Response**

Page 14 of 14

Applicant(s): *Stockman et al.*

Serial No.: 10/044,219

Confirmation No.: 9179

Filed: November 19, 2001

For: **METHODS FOR CREATING A COMPOUND LIBRARY**

---

**Summary**

It is respectfully submitted that the pending claims 46-53 and 55 are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted for

**Stockman et al.**

By

Muetting, Raasch & Gebhardt, P.A.

P.O. Box 581415

Minneapolis, MN 55458-1415

Phone: (612) 305-1220

Facsimile: (612) 305-1228

**Customer Number 26813**

Date

August 19, 2003

By:

Ann M. Muetting

Ann M. Muetting

Reg. No. 33,977

Direct Dial (612)305-1217

---

**CERTIFICATE UNDER 37 CFR §1.10:**

"Express Mail" mailing label number: **EV 073737785 US**

Date of Deposit: **AUGUST 19, 2003**

The undersigned hereby certifies that the Transmittal Letter and the paper(s) and/or fee(s), as described hereinabove, are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR §1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By:

Name:

Sam Her  
**SAM HER**

---